

The advantages of a diverse distribution of the polyps is gained in the higher forms by a different method. The colony, instead of growing over foreign bodies, becomes raised from an attached base, and expands freely. One surface of the colony gives origin to the individual polyps, while the other represents the attached surface of an encrusting form. From mechanical causes, however, the colony does not remain of a flattened shape, but becomes coiled up in a tube-like fashion, so as to bring the polyps to the outside, placing the former basal surface to the interior of the coil. At the same time spicules are differentiated in the cœnenchyma and become closely aggregated, so as to form a supporting axis. These conditions are seen in some of the lower forms belonging to the Briareidæ, such as *Solenocaulon*, while in the higher types the axis is better developed, occupies the interior of the colonial mass, and forms a cylinder, which is surrounded by the polyp-bearing cœnenchyma. In this way we may suppose that the division of Scleraxonia, of which *Coralium* represents the highest form, has developed.

In another series of forms, the favourable distribution of the individuals is otherwise attained. Bundles of polyps, the walls of which have thickened into a common cœnenchymatous mass, grow out into long cylindrical masses, and develop from their cœnenchyma new polyps at diverse heights. These may again form similar polyp bundles. In this way there arise those lobed masses as seen in *Alcyonium* and *Lobularia*, or if but a few tubes are united in each bundle, more bushy or tuft-like colonies as in *Nepthyidæ*.

Lastly, as another stage in the evolution, we find that a single polyp with a canalicular cœnenchyma grows out into a long cylindrical axial polyp, from the walls of which small polyps with short cavities and long tubular buds arise which may again bear small lateral polyps. Such a condition is exhibited by *Telesto* among the *Cornulariidæ*. For the development of a very expanded colony the hollow axial polyp forms by itself too weak a support, and there develops a more or less solid horny or calcareous central axis. The forms which thus arise fall into two divisions. The one (*Pennatulacea*) includes free, the other (*Holaxonia* or *Axifera* of v. Koch) more or less fixed colonies.

The advantages gained by the formation of an upward branching colony may, however, under special conditions become lost. This is seen in some of the axis-bearing *Gorgonacea*, when they occur at great depths. For here the food is not swept about by movements in the water, but falls from above to the bottom. It would be under these circumstances an advantage if the colony could be formed on the incrusting type, but since organic development progresses and cannot at once revert to an original type, the characters already established have to become adapted to the altered conditions, so we find that the *Gorgonid* stem in such instances becomes a creeping polyp-bearing axis and the polyps develop only on the one side, as in some species of *Strophogorgia*, *Bathygorgia*, and others. In this way all the polyps come to lie in the one plane, and each has an equal chance of obtaining the food as it falls from above.

And yet in another way may a support for the ascending colony be developed. In